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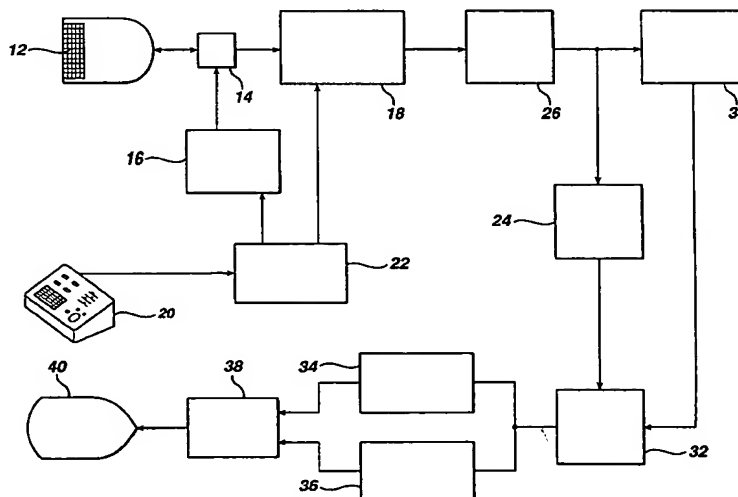
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(54) Title: **IMPROVED ULTRASONIC VOLUMETRIC IMAGING BY COORDINATION OF ACOUSTIC SAMPLING RESOLUTION, VOLUMETRIC LINE DENSITY AND VOLUME IMAGING RATE**



(57) Abstract: In an ultrasonic diagnostic imaging system which scans a volumetric region, the sampling bandwidth or spatial resolution is matched to the achievable transducer resolution determined by the aperture size and the wavelength and the desired output bandwidth or volume imaging rate. In an illustrated embodiment this is done by controlling the spatial point spread function of the beams used to scan the volumetric region to provide a more optimal relationship between the acoustic sampling resolution, the desired output line density, and the volume imaging rate. The benefits of this optimization can be to maximize the information content and information movement efficiency by not acquiring more resolution than can be utilized, and to provide a more optimal sampling function, using the aperture function to limit the spatial bandwidth.

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